

THAT WHICH IS CLAIMED IS:

1. A system for reviving a code used for channel coding data in data communications systems comprising:

- 5 a data receiving circuit for receiving a digital input data sequence to be coded with a code having a distance spectrum containing an infinite component that corresponds to a finite hamming weight such that the code may cause catastrophic error propagation, said circuit being operative for
10 periodically inserting known symbols into the digital input data sequence; and
an encoder operatively connected to said data receiving circuit for encoding the digital input data sequence with the code.

2. A system according to Claim 1, wherein the known symbols that are inserted comprise zeros.

3. A system according to Claim 1, wherein said encoder comprises a convolutional encoder.

4. A system according to Claim 1, wherein said encoder is operative for trellis encoding the expanded digital input data sequence to produce a channel coded data stream such that the number of
5 connections between trellis nodes in a trellis are reduced.

5. A system according to Claim 4, wherein the trellis corresponds to a memory length m , and the known symbols are inserted after each m symbol within the input data sequence.

10090237.030402

[illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible]

---	---	---	---

12. A method according to Claim 10, wherein
the convolutional code comprises a time invariant
convolutional code such that a corresponding state
diagram contains a circuit in which a nonzero input
5 sequence corresponds to an all-zero output sequence.

13. A method according to Claim 6, and
further comprising the step of trellis encoding the
digital input data sequence after inserting the known
symbols to produce a channel coded data stream.

14. A method according to Claim 13, wherein
the topology of the trellis corresponds to a memory
length m, and further comprising the step of inserting
a known symbol after each m symbol within the digital
5 input data sequence.

15. A method of reviving a code used for
channel coding data in a data communications systems
comprising the steps of:

receiving a digital input data sequence to be
5 coded with a code having a distance spectrum containing
an infinite component that corresponds to a finite
hamming weight such that the code may cause
catastrophic error propagation;

periodically inserting known symbols into the
10 digital input data sequence; and

trellis encoding the digital input data
sequence after inserting the known symbols to produce a
channel coded data stream such that the number of
connections between trellis nodes in a trellis are
15 reduced.

16. A method according to Claim 15, wherein
the topology of the trellis corresponds to a memory
length m , and further comprising the step of inserting
a known symbol after each m symbol within the digital
5 input data sequence.

17. A method according to Claim 15, and
further comprising the step of applying code words that
are one-to-one mappings of distinct paths on a trellis
to binary sequences.

18. A method according to Claim 15, wherein
the step of inserting known symbols comprises the step
of inserting zeros into the digital input data
sequence.

19. A method according to Claim 15, and
further comprising the step of inserting a zero after
each of two information bits within the digital input
data sequence.

20. A method according to Claim 15, and
further comprising the step of inserting a zero after
each of four information bits within the digital input
data sequence.

21. A method according to Claim 15, wherein
the code for encoding the digital input data sequence
comprises a convolutional code.

22. A method according to Claim 21, wherein
the code comprises a time varying convolutional code.

